



Province of the  
**EASTERN CAPE**  
EDUCATION

Iphondo leMpuma Kapa: Isebe leMfundo  
Provinsie van die Oos Kaap: Departement van Onderwys  
Porafensie Ya Kapa Botjhabela: Lefapha la Thuto

# **NATIONAL SENIOR CERTIFICATE**

## **IBANGA 12**

### **SEPTEMBER 2024**

## **ISAYENSI YEZOLIMO P1 ISIKHOKHELO SOKUMAKISHA**

**AMANQAKU: 150**

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Esi sikhokelo sokumakisha sinamaphepha ali-10

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**ICANDELO A****UMBUZO 1**

1.1	1.1.1	C ✓✓		
	1.1.2	D ✓✓		
	1.1.3	C ✓✓		
	1.1.4	A ✓✓		
	1.1.5	D ✓✓		
	1.1.6	B ✓✓		
	1.1.7	D ✓✓		
	1.1.8	A ✓✓		
	1.1.9	C ✓✓		
	1.1.10	A ✓✓	(10 x 2)	(20)
1.2	1.2.1	A kuphela ✓✓		
	1.2.2	Nanye ✓✓		
	1.2.3	A no B ✓✓		
	1.2.4	B kuphela ✓✓		
	1.2.5	A kuphela ✓✓	(5 x 2)	(10)
1.3	1.3.1	yisolubility ✓✓		
	1.3.2	yimetabolic ✓✓		
	1.3.3	yiamniotic fluid ✓✓		
	1.3.4	yiprolapse ✓✓		
	1.3.5	yicolostrum ✓✓	(5 x 2)	(10)
1.4	1.4.1	yibiological value ✓		
	1.4.2	yiblowfly ✓		
	1.4.3	yicryptorchidism ✓		
	1.4.4	zidizygotic twins ✓		
	1.4.5	yilactation ✓	(5 x 1)	(5)

**AMANQAKU KUCANDELO A: 45**

**ICANDELO B****UMBUZO 2: ISONDLO NOKUTYA KWEZILWANYANA**

- 2.1 2.1.1 **KLASIFIKATION YEFARM ANIMALS**  
yinon-ruminant ✓ (1)
- 2.1.2 **Nombolo zeparts kwidayagram**
- (a) C ✓ (1)  
(b) F ✓ (1)  
(c) B ✓ (1)  
(d) D ✓ (1)
- 2.2 2.2.1 **Ukuchongwa kwe feed khomponenti eziklasifaywa njenge inorganic**  
ziminerals ✓ (1)
- 2.2.2 **Ukuchongwa kwezona zilungileyo iminerals**
- (a) zicarbohydrates ✓ (1)  
(b) ziprotein ✓ (1)
- 2.2.3 **Absorpshin prosesi that makes eyanza umsebenzi we carrier molecuoles**  
yiactive absorption ✓ (1)
- 2.2.4 **ivitamins/ imineral elements**
- A yivitamin K ✓ (1)  
B yipica ✓ (1)  
C yiron ✓/copper/ vithamin B12 (1)
- 2.3 2.3.1 **khaltyhulashin yedigestibility co-efficient**
- Dry matter excreted = 50% of 6 kg  

$$= \frac{50}{100} \times 6 \text{ kg}$$

$$= 3 \text{ kg} \checkmark$$
Coefficient of digestibility =  

$$\frac{\text{Dry matter intake} - \text{Dry matter excreted}}{\text{Dry matter intake}} \times 100 \checkmark$$

$$= \frac{15 \text{ kg} - 3 \text{ kg}}{15 \text{ kg}} \times 100 \checkmark$$

$$= 80 \checkmark \% \checkmark$$
 (5)
- 2.3.2 **ukucacisa ikhaltyhulashini**
- ukutya kucoleke kakhulu/ 80% ✓
  - ukutya kunekhonsentrates ✓
  - ukutya kune fibre encinci ✓
- (Any 1 x 1) (1)

2.3.3 **Ifactors eziMBINI ezinokuncedisa ukucolwa kwehabile**

- ukulungiswa kwehabile ✓
- istage apho isityalo sithe sanqunyulwa ngayo ukwenza ihabile ✓
- ihabile yenziwe kwessiphi isityalo ✓
- ukongeza ngenon-protein nitrogen ✓
- ukongeza ngemolasses neprotein ✓

(Any 2 x 1) (2)

2.4 2.4.1 **ieneji ku B**

yimetabolic energy ✓

(1)

2.4.2 **Khaltyhulashin yeamount yenet eneji igusha enokuyifumana kukutya kwemini.**

(1)

Net energy = gross energy – (faeces + urine and gases + heat) ✓

$$= 15 - (5 + 1,3 + 0,9) ✓$$

$$= 15 - 7,2$$

$$= 7,8 \text{ MJ/kg DM} ✓$$

(3)

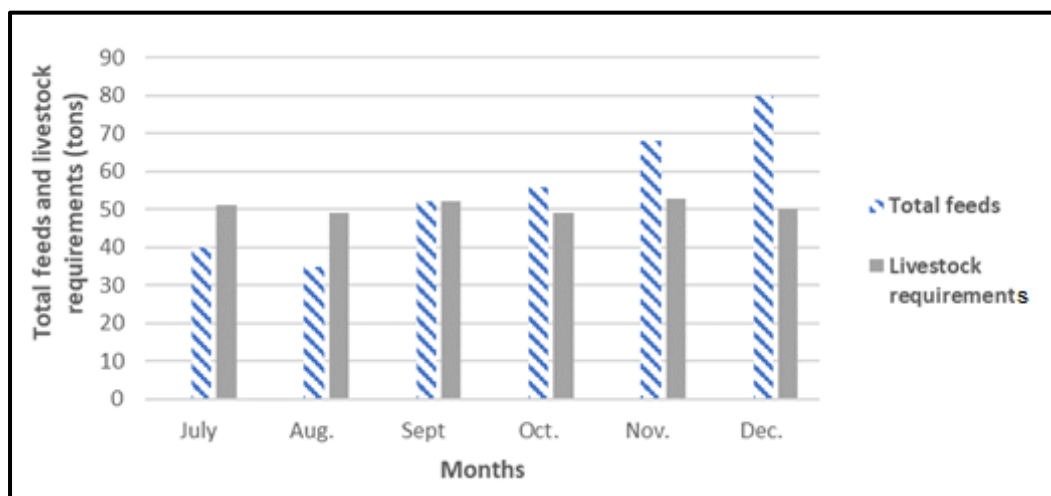
2.4.3 **Ukucaciswa kwekhaltyhulashin kuMBUZO 2.4.2**

- Emva kwe eneji value ye15,648 MJ/kg DM, kuphela 8,034 MJ/kg DM yeeneji iyabonakala kwianimal emva kwelosses. ✓
- Ngumyinge 52% wepotential eneji eyalahlekayo. ✓
- Kuphela yi48% kwipotential eneji value ekhoyo ukusetyenziswa yianimal . ✓

(Any 1 x 1)

(1)

2.5 2.5.1 Thelekisa phakathi kwetotal feed available nelivestock requirements emva kwenyanga ezintandathu



**Indlela yokumakisha**

- yicorrect title ✓
- yicorrectly calibrated and labelled y-axis (Total feeds and livestock requirements) ✓
- yicorrectly calibrated and labelled x-axis (iinyanga) ✓
- ziunits (tons) ✓
- yicorrect graph type ✓
- yiaccuracy (eplotwe ngokuchanekileyo) ✓

(6)

2.5.2 Isurplus kwinyanga kaDecember ngokwe kg

$$\text{Surplus} = 30\text{t} \times 1\,000 \checkmark$$

$$= 30\,000 \text{ kg} \checkmark$$

(2)

2.5.3 icost-effective measures umfama angazisebenzisa ukumelana nesurplus yenyanga kaDecember

- Yiensiling ✓
- Yenza hay / Bailing / Storage ✓

(Any 1 x 2)

(2)

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### UMBUZO 3: UKUVELISWA, UKUKHUSELWA KUNYE NOKULAWULWA KWEZILWANYANA

- 3.1 3.1.1 **ifarming system ebonakaliswa kwiPICTURE B**  
Yisubsistence farming ✓ (1)
- 3.1.2 **Injongo zefarming system engentla**  
Yondla ifamily kuphela , akhonto ishiyekayo ✓ (1)
- 3.1.3 **ihypothesis yeproductivity yefarming system ekuPICTURE A**  
phezulu ✓ (1)
- 3.1.4 **Ukuchazwa ukuba ifactors ezingezantsi ziyenyusa njani imveliso kwiextensive farming**
- (a) **Ireproduction**
- ukukhethwa kwezilwanyana ezimpawu ezibhetele zokumithisa. ✓
  - izilwanyana ezisuka kwimihlambi eyahlukeneyo ✓  
(Any 1 x 1) (1)
- (b) **Inutrition**
- ukungezwa kwesupplementary feeding xa amadlelo wendalo engoneli ✓
  - icreep / iflush feeding
  - endlela elungileyo yokondla ✓ (Any 1 x 1)
- 3.2 **Ifasilithi onokuykhuthaza yemfuyo**
- 3.2.1 yiinfra-red lights/iheater/iair conditioner ✓ (Any 1 x 1) (1)
- 3.2.2 Yinsulation ✓ (1)
- 3.2.3 zifeeders ✓ (1)
- 3.3 3.3.1 **Ukuchaza ihomoeothermic**  
Ukugcinwa kwamaqondo obushushu yianimal. ✓ (2)
- 3.3.2 **Indlela eNYPE umfama akhusela ngayo izilwanyana zakhe kumaqondo obushushu agqithisileyo kwiextensive production system.**
- Tyala imithi ✓
  - Yiba namanzi ✓
  - Fuya izilwanyana ezikwaziyo ukumelana namaqondo aphezulu wobushushu . ✓  
(Any 1 x 1) (1)
- 3.3.3 **Unxulumano phakathi kokutya, amanzi nokuveliswa kwezilwanyana xa kushushu**  
Xa kushushu ifarm animals zisela amanzi amaninzi, ✓ zidla ukutya kancinci ✓ zivelise kancinci. ✓ (3)

- 3.4 3.4.1 **ifasilithi kwipicture**  
yiholding pen ✓ (1)
- 3.4.2 **I design features zibeMBINI xa usenza lefasilithi**  
  - yisolid sides ✓
  - kungabikho ikona ezibukhali ✓
  - amacala edonga makabemade kwaye omelele ✓  
(Any 2 x 1)
(2)
- 3.4.3 **Umsebenzi walefasilithi**  
Gcina izilwanyana phambi kokuba zibanjwe ✓ (1)
- 3.5 3.5.1 **Isifo sebele kwipicture**  
yimastitis ✓ (1)
- 3.5.2 **Klasification yesifo kiMBUZO 3.5.1. ugxile kwizifo ezisenzayo**  
yibacterial disease ✓ (1)
- 3.5.3 **Impawu isilwanyana esinokuzibonakalisa xa sibanjwe sesisifo**  
  - ubisi lujiyile lunezigaqa ✓
  - amasuntswana wegazi ✓
  - luyehla izinga lokuvelisa ubisi ✓
  - ayifuni thole . ✓
  - ibele liqinile, lidumbile, liyatshisa ✓
  - yakhawuleza ipulse rate ✓
  - yangxabalaza ingasondezi milenze ebeleni ✓ (Any 2 x 1)
(2)
- 3.5.4 **zibeMBINI iziphumo zentengiso**  
  - yehla imveliso yobisi ✓
  - ziyafa ✓
  - maxabiso aphezulu wokunyanga ✓
  - imali ayenzeki ✓ (Any 2 x 1)
(2)
- 3.6 3.6.1 **Klasificashin yeeparasite kwiMIFANEKISO A no B**  
A – yiexternal/ ecto- parasite ✓  
C – yiinternal/ endo- parasite ✓ (2)
- 3.6.2 **Izifo ezenziwa ziiparasite kuMFANEKISO A**  
Mange ✓  
Scab ✓ (Any 1 x 1) (1)

**3.6.3 Impawu zibeMBINI ezenziwe sisifo esixelwe kuMBUZO 3.6.2**

- yarhawuzela kumnke noboya . ✓
  - yidermatitis ✓
  - msila awunaboya ✓
- (Any 2 x 1) (2)

**3.6.4 Ngasikhusela njani isimfimfithi esikuMFANEKISO B**

- tshintsha amadlelo . ✓
  - lumkele indawo ezimanzi/ areas around drinking spots should be kept dry. ✓
  - biyela ifama. ✓
  - fuya izilwanyana ezingachaphazeleki lula zizmfimfithi. ✓
- (Any 2 x 1) (2)

**3.7 3.7.1 zibeMBINI impawu zetyuwa emzimbeni, kwelibinza lingentla, ezinokuqapheleka kwizilwanyana zasefama**

- amathe amaninzi ✓
  - ukuqunjelwa ✓
  - kwandisa unxaano ✓
- (Any 2 x 1) (2)

**3.7.2 ibeNYE indlela yokukhusela ipoison yetyuwa.**

- nika izilwanyana ityuwa eyaneleyo ✓
  - nika izilwanyana amanzi awoneleyo ✓
  - Ukuba izilwanyana azinikwanga ityuwa ixesha elide, mazinganikwa okunye ukutya okunetyuwa ✓
  - ilick mayibe kufutshane nendawo yamanzi ✓
- (Any 1 x 1) (1)

**3.7.3 ubeMNYE umsebenzi karulumente ukukhusela izilwanyana**

- ukuqeqeshwa kwabalimi kumaziko emfundo aohakamileyo. ✓
- ukumiswa nkwemithetho elawula iimfuno zabafuyi ✓
- uphando nokulolongwa kwezilwanyana. ✓
- ukulawulwa kokuzala nokusetyenziwa kwamayeza emfuyo ngokusemthethweni.
- ukulawulwa kwemveliso ezithunyelwa nezithengwa ngaphandle. ✓
- ukuqatshelwa nokulawulwa kwezifo ngabahloli benyama abathi babone izifo kwimfuyo. ✓
- ukuveliswa kwamayeza akhethekileyo emfuyo. ✓
- Zigcinwe endaweni phambi kokungeniswa ngaphakathi ✓
- Uphando olwenzwa ukuhoya nokukhuthaza iimfuno eziphambili zabafuyi. ✓

(Any 1 x 1) (1)

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**UMBUZO 4: UKUZALA KWEZILWANYANA**

- 4.1 4.1.1 **izilwanyana ezinereproductive system**  
Cow ✓ (1)
- 4.1.2 **indawo elabhelishwe u A no B**  
B – Vagina ✓  
E – Oviduct/ fallopian tube ✓ (2)
- 4.1.3 **Unobumba onxulumene nalapho kwenzeka khona okulandelayo**
- (a) F ✓ (1)
- (b) C ✓ (1)
- 4.2 4.2.1 **ixesha kwioestrus cycle eliphawuleka ngokwenzeka kwe corpus luteum**  
Met-oestrus/ Meta-oestrus ✓ (1)
- 4.2.2 **ihomoni eyenza iovulation kulecycle**  
Luteinising hormone/ LH ✓ (1)
- 4.2.3 **ukuchazwa kweoestrus**  
  - loestrus lixesha kwireproduction apha efemale cow ibonakalisa umdla wokukhwelwa zinkunzi ✓
(Any 1 x 2) (2)
- 4.2.4 **indlela eziMBINI zokubona inkomo edumbileyo**  
  - Chin-ball markers ✓
  - Tail chalking ✓
  - Pedometer ✓
  - Heat mount detector ✓
(Any 2 x 1) (2)
- 4.3 4.3.1 **isitayji semating esibonakaliswe kulomfanekiso**  
Courtship ✓ (1)
- 4.3.2 **ifactor zibeMBINI ezilawula imating behaviour**  
  - Genetics ✓
  - Environmental factors ✓
  - Physiological factors ✓
  - Health ✓
  - Previous experience ✓
(Any 2 x 1) (2)
- 4.4 4.4.1 **isixhobo kuMFANEKISO A**  
Electro-ejaculation probe ✓ (1)

- 4.4.2 **umsebenzi wesixhobo esixelwe kuMBUZO 4.4.1**  
Stimulate ejaculation ✓ (1)
- 4.4.3 **amaqondo afunekayo kwisemen eqokelelweyo**  
-196 °C ✓ (1)
- 4.4.4 **umsebenzi wesemen dilutants**  
(a) ikhusela ukutshintsha kwe PH ✓ (1)  
(b) Inika izakha mzimba kwi perm cells ✓ (1)  
(c) khusela ukukhula kwebacteria ✓ (1)
- 4.4.5 **ukucacaiswa kwexesha elilungileyo xa kusenziwa iartificial insemination**  
Inkomo ezibonakalisa impawu zеоestrus kusasa mazi inseminathwe emva kwemini ngkunjalo nezibonakaliswe emva kwemini mazi inseminethwe kusasa kusuku olulandelayo ✓ (2)
- 4.5 4.5.1 **ukucaciswa kweprocedure kulediagram**  
Cloning/ Nuclear transfer ✓ (1)
- 4.5.2 **igama le animal C kwi procedure**  
Surrogate sheep ✓ (1)
- 4.5.3 **ukulungela kwale technique kwi subsistence farming**  
ayikulungelanga ✓ (1)
- 4.5.4 **xhasa lempendulo kuMbuzo 4.5.3**  
• Ibiza imali eninzi  
• ifuna iskill sengcaphephe (Any 1 x 1) (1)
- 4.6 4.6.1 **prosesi eboniswe ngumfanekiso ongentla**  
Parturition/ calving ✓ (1)
- 4.6.2 **Igama lemeko enokuchaphazela leprosesi**  
Dystocia ✓ (1)
- 4.6.3 **zibeMBINI izizathu ezibangele oku kungentla kuMBUZO 4.6.2**  
• kugobe ingqiniba ✓  
• intloko iphuma ecaleni ✓  
• ukungaphumi komlenze omnye okanye yomobini ✓  
• intloko enamanzi ✓  
• amawele ✓  
• isidalwa ✓  
• lize ngomphambili ✓ (Any 2 x 1) (2)
- 4.6.4 **Ipfayzisi zеоestrus ngokulandelelana**  
E ✓  
D ✓  
B ✓  
C ✓  
A ✓ (5)

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EWONKE KWICANDELO B: 105

AMANQAKU EWONKE: 150

